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Progressive enterprises, where thermal networks and heat-consuming installations are managed on a highly efficient level and condensates are carefully prepared and used, furnish outstanding examples of economy and efficiency.

In 1949 the Gor'kiy Chemical Plant, a great consumer of thermal energy, succeeded in economizing 3.07 percent of its total steam consumption and, in the first quarter of the present year, in increasing this figure to 3.4 percent despite reduced individual consumption norms. The collective of power engineers and technologists in this plant introduced a number of effective measures for economy of heat. For example, the heat from condensate superheating was utilized to heat one of the plant buildings, so that less steam was needed for such purposes. On the technological side, the heat of waste fluids was used, and coil pipes were blown out by exhaust instead of live steam. A considerable economy in thermal power was effected by installing an evaporator with forced circulation and replacing the triple-shell with a quadruple-shell evaporator system.

In recent years the Ural Aluminum Plant has been systematically improving the operation of its heat-consuming units by reduction of heat losses, utilization of waste heat, more efficient use of steam lines and regular inspections of thermal insulation. As a result the economy effected in thermal energy amounted to about 4 percent of the total steam consumption.

Among the many enterprises which have achieved similar economies are the "Trekhgornaya Manufaktura" Combine, the Moscow Tire Plant, the Leningrad Plant imeni Slutskoy and the Kushvinskiy Metallurgical Plant.

Unsatisfactory results in utilizing heat and overconsumption of thermal energy as compared with authorized norms for specific consumption have been noted in the following enterprises: the Khar'kov Transport Machine Building Plant; the Ivanovo Factory, Ministry of Light Industry; the Kemerovo Chemical Plant; the Leningrad Plant imeni Radishchev and others. In certain plants, for instance the Rostov Plant of the Ministry of Light Industry and the Moscow Meat Combine, the books show an economy of thermal energy but it is a fictitious economy resulting from excessively high norms.

One of the most important methods of saving power and fuel while increasing the efficiency of boiler units is through economical use of condensates in enterprises and increasing their recovery in electric power stations. For the past 6 years, following a governmental decree, condensate recovery increased 46 percent as compared with 1944.

However, lately there has been a decrease in the condensate recovery rate. In the first quarter of the current year, recoveries amounted to 38.3 percent, i.e., the rate had increased only 1.3 percent over that of the first quarter of 1949. More attention should be paid to this important question.

It is intolerable that individual enterprises should neither comply with the established norms for recovery of condensates, nor take proper steps for removing impurities, to the great detriment of the enterprises themselves and the electric power stations.

The experience of progressive enterprises, where economical use of condensates is well established, bears witness to the possibility of increased condensate recovery with simultaneous improvement in its quality. Last year, for example, the Kazan Plant "Iskoz" increased the percentage

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of condensate recovery from 41 to 70 percent; the Ural Aluminum Plant from 82.5 to 86.5 percent. Steam consumers of the Moscow Power System showed an increase of 3 percent; consumers of the Kazan System 6.09 percent, and of the Kuybyshev System 4.1 percent.

However, many enterprises did not fulfill the plan for condensate recovery in 1949 and the first quarter of 1950. To this number belong: the Kemerovo Chemical Plant, Barnaul' Melanzhevyy (Textile) Combine, Barnaul' Transport Machine Building Plant, the Berezniki Soda Plant, Orsk Oil Refinery, Khar'kov Tractor Plant, and others.

In individual enterprises this decreased rate of condensate recovery is due to inadequate maintenance, deterioration of condenser apparatus, faulty observation and control of condensate quality, etc.

In 1948 the Kamskoye Cellulose and Paper Combine which is one of the great consumers of thermal heat recovered 44.6 percent of the condensate. In 1949, for no good reason, this figure fell to 42.7 percent. In some of this combine's machines, 92 percent of the condensate was recovered, in others operating under the same conditions, only 80 percent was recovered. The result was that, in addition to a loss of 600,000 rubles incurred by the combine, the water reserve of the TETs supplying the combine with thermal power was gravely affected. The combine workers had forgotten that some years earlier the whole boiler system had broken down because of the poor quality of the feedwater and the employees of both the station and the consumer plants had to work hard to put the heat and power station in reliable running order.

Because of insufficient control over the quality of the condensate at the Moscow "Dynamo" Plant imeni S. M. Kirov, the condensate, in many cases, was discharged into the sewer system. Last February, because of negligence of the workers, condensate with acid impurities was delivered to the TETs, which might have caused serious damage to the electric power station boilers.

Because of unsatisfactory purification, the plan for returning the condensate to the power station was not fulfilled in individual months of 1949 and in the first quarter of 1950 at the Moscow Bearings Plant imeni L. M. Kaganovich, Moscow Chemical Plant, Krasnoyarsk Hydrolysis Plant and others.

Another example of irresponsibility in this regard is furnished by the Groznyy Petroleum Refinery, Ministry of the Petroleum Industry. During the first quarter of this year, this refinery, with a norm of 25 percent, recovered only 2.9 percent. The workers tried to blame nonfulfilment of the plan on an increase in the oil content of the condensate. An inspection showed that the plant had a serviceable oil filter which had not been in operation for a long time for lack of activated charcoal. It is well known that there are sufficient stocks of activated charcoal so this deficiency cannot be the reason for the breakdown in condensate recovery. The real reason is that key workers underrate its importance, pay little heed to the economical indices of their work and the conditions necessary to ensure the reliable and uninterrupted operation of the TETs which supplies their plant with thermal energy.

Radical improvements are needed in steam condensate recovery by commercial enterprises; closed systems should be more widely employed; and greater attention should be devoted to recovery and utilization of condensate heat as well as in reducing heat losses by means of secondary boiling and passing the steam through the condensers. Basic principles and technical instructions may be found in the "Directions for Collecting and Utilizing Condensates," published by Gosenergonadzor in 1949. Attention to these instructions would aid industrial workers in substantially increasing condensate savings.

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The extremely important problem of industrial utilization of secondary power resources deserves special attention. In December 1948 the All-Union Scientific and Technical Conference on Industrial Power, devoted to the fundamental problems connected with secondary power resources, considered the main methods and practical problems in this field, and decided that better utilization of these resources was one of the chief factors in increasing power efficiency, fuel, heat and power economy and in improving the general productive economy as a whole.

For some time after the Conference, enterprises showed their interest by making a number of suggestions on the use of waste gases, exhaust steam, waste slag, etc. At the 1949 All-Union Competition of Economy of Electrical and Thermal Energy there were twice as many suggestions put forward on secondary power resources as in the 1948 competition. But results, in comparison with the great possibilities, were very insignificant.

In fact, many branches of industry incur losses because of poor utilization of the heat of exhaust steam, condensates, cooling water, waste, high-temperature gases, etc., necessitating the use of bleeder steam (from turbines) or boiler steam for heat loads for industrial enterprises which might have been satisfied by the exhaust and waste heat from production processes.

Industrial experience and theory prove that Soviet technology and practice have achieved great successes in utilizing by-products of fuel and waste material (waste with high ash content, blast-furnace and coke-oven gases, etc.). But in other secondary power resources, especially the physical heat of hot products, waste gases, exhaust steam, cooling water and other heat-carriers, the level is very low.

Waste furnace gas is not adequately used (salvagers are not widely employed) and a large number of heating furnaces have no regenerators. Exhaust steam (from hammers, presses, steam machines, compressors, etc.) and condensate heat are not sufficiently utilized.

Radical changes must be made in this situation in accordance with the resolutions of the All-Union Scientific and Technical Conference on Industrial Power and the experience of production and efficiency experts. All problems of thermal energy conservation and utilization of secondary power resources can be successfully solved on the basis of widely developed socialist competition, making full use of available scientific advancements and carrying on continuous organizational work toward this end.

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